

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of coding an audio signal, the method comprising the acts of:

generating a monaural signal,

analyzing the spatial characteristics of at least two audio channels to obtain one or more sets of spatial parameters for successive time slots,

responsive to said monaural signal containing a transient at a given transient time, determining a non-uniform time segmentation of said sets of spatial parameters for a period including said transient time,

determining a relevance of said transient by looking at a difference between first estimated spatial parameters derived from

a first window that surrounds a transient location of said transient and second estimated spatial parameters derived from a second window around said transient location, the second window being shorter than the first window;

generating an encoded signal comprising the monaural signal and the one or more sets of spatial parameters; and

if said difference is larger than a threshold, then inserting in the encoded signal additional parameters estimated around said transient location.

2. (Previously Presented) The method according to claim 1 wherein said monaural signal comprises a combination of at least two input audio channels.

3. (Previously Presented) The method according to claim 1 wherein said monaural signal is generated with a parametric sinusoidal coder, said coder generating frames corresponding to successive time slots of said monaural signal, at least some of said frames including parameters representing a transient occurring

in the respective time slots represented by said frames.

4. (Currently Amended) The method according to claim 1 wherein said monaural signal is generated with a waveform encoder, said ~~coder~~ waveform encoder determining a non-uniform time segmentation of said monaural signal for a period including said transient time.

5. (Previously Presented) The method according to claim 4 wherein said waveform encoder is an mp3 encoder.

6. (Previously Presented) The method according to claim 1 wherein said sets of spatial parameters include at least two localization cues.

7. (Previously Presented) The method according to claim 6 wherein said sets of spatial parameters further comprises a parameter that describes a similarity or dissimilarity of waveforms that cannot be accounted for by the localization cues.

8. (Previously Presented) The method according to claim 7 wherein the parameter is a maximum of a cross-correlation function.

9. (Previously Presented) An encoder for coding an audio signal, the encoder comprising:

a sum generator configured to generate a monaural signal,
an analyzer configured to analyze spatial characteristics of at least two audio channels to obtain one or more sets of spatial parameters for successive time slots,

a transient coder, responsive to said monaural signal containing a transient at a given transient time, configured to determine a non-uniform time segmentation of said sets of spatial parameters for a period including said transient time,

a parameter generator configured to determine a relevance of said transient by looking at a difference between first estimated spatial parameters derived from a first window that surrounds a transient location of said transient and second estimated spatial parameters derived from a second window around said transient location, the second window being shorter than the first window;

and

a multiplexer configured to generate an encoded signal comprising the monaural signal and the one or more sets of spatial parameters;

wherein the parameter generator is further configured to insert in the encoded signal additional parameters estimated around said transient location if said difference is larger than a threshold.

10.(Original) An apparatus for supplying an audio signal, the apparatus comprising:

an input for receiving an audio signal,
an encoder as claimed in claim 9 for encoding the audio signal to obtain an encoded audio signal, and
an output for supplying the encoded audio signal.

Claim 11 (Canceled)

12.(Previously Presented) A storage medium on which an

encoded signal has been stored, the signal comprising:

a monaural signal containing at least one indication of a transient occurring at a given time in said monaural signal; and

one or more sets of spatial parameters for successive time slots of said signal, said sets of spatial parameters providing a non-uniform time segmentation of audio signal for a period including said transient time;

wherein the one or more sets of spatial parameters is indicative of a difference being larger than a threshold, the difference being between first estimated spatial parameters derived from a first window that surrounds a transient location of said transient and second estimated spatial parameters derived from a second window around said transient location, the second window being shorter than the first window.

13. (Previously Presented) A method of decoding an encoded audio signal, the method comprising:

obtaining a monaural signal from the encoded audio signal,
obtaining one or more sets of spatial parameters from the

encoded audio signal, and

responsive to said monaural signal containing a transient at a given time, determining a non-uniform time segmentation of said sets of spatial parameters for a period including said transient time, and

applying the one or more sets of spatial parameters to the monaural signal to generate a multi-channel output signal,

wherein the one or more sets of spatial parameters is indicative of a difference being larger than a threshold, the difference being between first estimated spatial parameters derived from a first window that surrounds a transient location of said transient and second estimated spatial parameters derived from a second window around said transient location, the second window being shorter than the first window.

14. (Previously Presented) A decoder for decoding an encoded audio signal comprising:

a de-multiplexer configured to obtain a monaural signal and one or more sets of spatial parameters from the encoded audio

signal, and a post-processor, responsive to said monaural signal containing a transient at a given time, configured to determine a non-uniform time segmentation of said sets of spatial parameters for a period including said transient time, the post-processor being further configured to apply the one or more sets of spatial parameters to the monaural signal to generate a multi-channel output signal,

wherein the one or more sets of spatial parameters is indicative of a difference being larger than a threshold, the difference being between first estimated spatial parameters derived from a first window that surrounds a transient location of said transient and second estimated spatial parameters derived from a second window around said transient location, the second window being shorter than the first window.

15. (Original) An apparatus for supplying a decoded audio signal, the apparatus comprising:

an input for receiving an encoded audio signal,

a decoder as claimed in claim 14 for decoding the encoded

audio signal to obtain a multi-channel output signal,
an output for supplying or reproducing the multi-channel
output signal.

16. (Previously Presented) The method of claim 1, wherein the additional parameters are inserted in an additional frame representing the second window around the transient location.

17. (Currently Amended) The method of claim 1, further comprising the act of including in the encoded signal an indication that the transient location is not selected for use in a spatial representation ~~ff-if~~ the difference is below the threshold.

18. (Previously Presented) The method of claim 1, wherein the transient is a first transient in a frame containing a plurality of transients.